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80275

S/170/60/003/02/07/026
B006/B005

AUTHOR:

Rips, S. M.

TITLE:

A Thermodynamic Investigation of the Process of Gasification
of Liquid Oxygen ||

PERIODICAL:

Inzhenerno-fizicheskiy zhurnal, 1960, Vol. 3, No. 2,
pp. 41-45

TEXT: The gasification of liquid oxygen in a "cold" gasifier of type "400" was investigated (Fig. 1). The values computed according to the temperature of the system are graphically shown by Fig. 2. As can be seen, the weight of the liquid decreases at the beginning of the process while the weight of the gaseous phase increases accordingly. This normal behavior only lasts to about $t = -167^{\circ}\text{C}$. Around this point, a dynamic equilibrium of the two phases can be observed. A "crisis" occurs at a further increase in temperature: the weight of the liquid begins to increase while the weight of the gaseous phase decreases accordingly. A further temperature increase may lead to a deformation of the gasifier (defect) due to the high inner pressure. The temperature at which the "crisis", or the condensation, respectively- X

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A Thermodynamic Investigation of the Process of
Gasification of Liquid Oxygen

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ly, occurs can be computed. The values corresponding to the practical working conditions were computed (Table 1). They show that the possibility of a defect cannot be excluded in the "cold" gasifiers applicable in practice. As the investigations have shown, a certain filling degree φ or a "specific gravity load" of the gasifier corresponds - depending on the pressure - to any given temperature. It is possible to prevent the occurrence of the reversible process and the accumulation of the liquid phase by this theoretically determinable quantity. Table 2 shows similar results for the plants equipped with "warm" gasifiers of type "50". The author thanks A. A. Gukhman for the interest shown. There are 2 figures, 2 tables, and 1 Soviet reference.

Card 2/2

RIPS, S.M.

Admissible extent of innage of bottles with liquefied hydrocarbons.
Khim. prom. no.8:610-613 Ag '63. (MIRA 16:12)

L 42035-66 EWT(m)/EWP(1)/T IJP(c) WW/JW/RM

ACC NR: AP6011229 (N) SOURCE CODE: UR/0413/66/000/006/0068/0068

INVENTOR: Rips, S. M.; Solyankin, L. N.

ORG: none

TITLE: Method of obtaining low-temperature insulation

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 6, 1966, 68

TOPIC TAGS: low temperature insulation, insulating material, foam plastic

ABSTRACT: An Author Certificate has been issued for a method of obtaining a low-temperature insulation by vacuum evaporation of a heat-insulating cavity filled with an insulating material of foam plastic. To decrease insulation weight, obtain a better vacuum, and improve the heat-insulating properties, individual parts of the heat-insulating space are filled with an insulating material between parallel rows of foil.
[Translation]

[NT]

SUB CODE: 11/ SUBM DATE: 30Oct64/

Card 1/1 af

UDC: 662.998.3:678

RIPS, S.M.

Determination of temperature field and heat losses in insulated
tank enclosures for liquefied gases, Khim.prom. no.2:135-141
F :62.

(Liquefied gases--Storage)

(MIRA 15:2)

VIDCOF, N.B.; RIPS, S.M.

Gas diverters in molds for casting, their design and construction.
Plast.massy no.9:57-60 '61. (MIRA 15:1)
(Plastics--Molding)

RIFS, S. M.

"Thermodynamical study of a process of gasifying liquid oxygen."

Report presented at the 1st All-Union Conference on Heat- and Mass- Exchange,
Minsk, BSSR, 5-9 June 1961

11.1000
26.2145

2007
S/064/62/000/002/006/008
B101/B144

AUTHOR: Rips, S. M.

TITLE: Determination of the temperature field and heat losses in the insulating covering of liquefied gas tanks

PERIODICAL: Khimicheskaya promyshlennost', no. 2, 1962, 59-65

TEXT: Equations are given for the heat flow during filling of the tank and for a temperature field that has become stationary. The tank is assumed to be cylindrical with semispherical bottoms. For a stationary state: $t_{stat} = t_{int} \frac{\log(R_{ext}/R)}{\log(R_{ext}/R_{int})} + t_{ext} \frac{\log(R/R_{int})}{\log(R_{ext}/R_{int})}$ is valid for the temperature of the centre of the insulation-layer of the cylindrical wall. t_{int} is the internal temperature, t_{ext} is the external temperature, R_{ext} is the external radius, R_{int} is the internal radius of the insulation. The heat flow is $Q_{stat} = [2\pi\lambda L / 2.3 \log(R_{ext}/R_{int})] (t_{int} - t_{ext})$ kcal/hr. L = length of the cylindrical part, λ = thermal conductivity coefficient of the insulation. For the bottoms the following equation is calculated: X

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Determination of the temperature ...

S/064/62/000/002/006/008
B101/B144

$t_{stat} = (t_{ext}R_{ext} - t_{int}R_{int})/(R_{ext} - R_{int}) + (t_{int} - t_{ext})R_{int}R_{ext}/(R_{ext} - R_{int})R$, and $Q_{stat} = 4\pi\lambda(t_{ext} - t_{int})R_{int}R_{ext}/\Delta R$ kcal/hr. The temperature field of 10 insulation layers of a tank with given dimensions during filling with liquid O_2 , N_2 or H_2 is calculated as an example. For insulations such as magnesia, mior, aerogel, slag wool, perlite and vacuum, the times $\Delta\tau_{max}$ are given, within which static temperature drop sets in. The loss during filling is also mentioned: for O_2 and mior insulation 0.093%, for aerogel 0.0375%, for slag wool 0.188% per hr. The losses for H_2 are 0.94, 0.38 and 1.88% per hr, respectively. There are 8 figures, 5 tables, and 2 references: 1 Soviet and 1 non-Soviet. The reference to the English-language publication reads as follows: Chem. Eng., no. 24 (1959).

Card 2/2

Report presented at the Conference on Heat and Transfer,
Minsk, USSR, 5-10 June 61.

104-2032
56

287. P. I. Pavlenko, Generalization of the Data on the Boiling Curve at Water Pressure in Pipes at the Operating Pressure Range.
288. I. B. Krichenkov, N. B. Khramova, I. N. Ivanov, Diffusion in Gases near the Critical Point of Liquid-Vapor Equilibrium.
289. V. I. Tikhonov, The Rate of Vapor Bubble Growth at Boiling of Liquid.
290. N. G. Syvukhin, New Investigation Results on Heat Transfer at Surface Boiling.
291. K. I. Ismailov, The Theory of Convective Heat Transfer at Vaporization.
292. I. B. Krichenkov, N. B. Khramova, I. N. Ivanov, Diffusion in Gases at High Pressures.
293. P. I. Pavlenko, Thermodynamic Similarity Method for Liquid Surface Tension Calculation.
294. A. V. Arsenov, A. S. Ievsky, Aerodynamic Burning and Heat Transfer in Cylindrical Chambers at Gas Fuel Combustion.
295. O. A. Gerasimov, Hydrodynamic Explanation of Electrical Properties of Insulating Liquids.
296. K. M. Lezhnevich, Aerodynamic Means of Heterogeneous Process Intensification.
297. S. M. Bitya, Thermodynamic Investigation of the Liquid Oxygen Combustion Process.
298. O. V. Vasyukina, I. S. Anisimov, On the Determination of the Work Duration of Process of Air Separation.
299. G. Faltreyt (GER), Heat and Mass Transfer at the Thermodynamic Phase of Boiling at Convective and Diffusive Heat Transfer Modes.
300. A. S. Glushko, Actual Problems of Boiling of Gases.
301. V. G. Karpov, Heat and Mass Transfer at Boiling of Brown Coal, Combined with Oxidation.
302. P. I. Pavlenko, A. A. Lepilina, Investigation of Inner Structure in Polymer Gels.
303. A. F. Sorokin, Ya. K. Kopylov, Relative-Convective Radiation Power of Pellet Cakes from.
304. V. N. Zaslavskiy, A. V. Kopylov, Experimental Investigation of Heat and Mass Transfer of the Pellet Cakes from Oxidation.
305. O. A. Bitya, Investigation of Convective and Conductive Modes of Transfer by Insulating Liquids.

RIPS, Ya. A.

Cand Tech Sci - (diss) "Method of engineering analysis of the reliability of electromagnetic relay parts in automatic installations." Moscow, 1961. 19 pp; (Ministry of Higher and Secondary Specialist RSFSR, Moscow Order of Lenin Power Inst); 150 copies; free; (KL, 6-61 sup, 224)

8(2)

SOV/105-59-8-13/28

AUTHOR:

Rips, Ya. A., Engineer (Moscow)

TITLE:

Estimate of the Operational Reliability of Electromagnetic Mechanisms

PERIODICAL:

Elektrichestvo, 1959, Nr 8, pp 57-62 (USSR)

ABSTRACT:

In this article a method is presented which permits estimation of the operational reliability of electromagnetic mechanisms from test runs with a relatively small number of samples. This method is essentially that of estimating the reliability according to probability laws governing the distribution of the parameters A_p , B_{1p} , and B_{2p} which may be chosen suitably. These parameters determine the course taken by a certain characteristic p or the admissible limits for a displacement of this curve ($B_{2p} > B_{1p}$). Such a characteristic may be found to be the time lag or the operating current (Ref 2). The inequalities $B_{2p} > A_p$ and $A_p > B_{1p}$ can be regarded as criteria of the reliability of the characteristic of the mechanism, if compliance with it is a necessary and sufficient condition for the load characteristic

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Estimate of the Operational Reliability of Electromagnetic Mechanisms

SOV/105-59-8-13/20

being within specified limits. The reliability $R(t)$ of the characteristic can then be expressed by formula (2). If A_p , B_{1p} and A_p , B_{2p} are not correlated with one another, $R(t)$ is specified by formula (4). In most cases $B_{1p} = 0$ or $B_{2p} = \infty$. The second term in formula (4) then equals zero, which gives formula (4"). The further investigation is limited to this case. A sudden breakdown is taken into consideration by the introduction of the multiplier $R'_p(t)$, formula (5). The most important and most common cases are those in which the distribution laws for A_p and B_{1p} are normal, corresponding to formulas (6) and (6'). On the basis of (6), (6'), (3), and (4"), and considering (5), formula (7) is obtained. For practical purposes this is transformed into formula (8) by introducing the average reserve coefficient at the instant t : $\bar{s}_t = \frac{\bar{A}_p}{\bar{B}_{1p}}$. The bar is a symbol for the mathematical expectation (mean value) of the random quantity.

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Estimate of the Operational Reliability of Electromagnetic Mechanisms

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From (8) it may be seen that the reliability is exclusively dependent upon the four quantities \bar{s}_t , σ'_a , σ'_b , and $R'_p(t)$. These quantities in turn depend upon the technological factors of production and the design of the device, the quality of the materials used, the storing conditions, and the operating conditions. $\sigma'_a = \frac{\sigma_a}{A_p}$, $\sigma'_b = \frac{\sigma_b}{B_{1p}}$, σ_a , and σ_b are the root mean square deviations from A_p and B_{1p} . This general method presented in this article is now applied to the evaluation of the operational reliability of electromagnetic mechanisms under the action of various disturbance factors according to operating and test data. An example is then calculated. B. S. Sotskov gave the author valuable advice in the elaboration of this article. There are 5 figures, 1 table, and 4 Soviet references.

SUBMITTED: October 8, 1958

Card 3/3

RIPS, Ya.A., kand.tekhn.nauk

Best form for bimetallic elements in thermal protection and automatic control apparatus. Elektrichestvo no.10:75-78 0 '63.
(MIRA 16:11)

24(8)

AUTHOR: Rips, Ya. A., Post-graduate Student

SOV/161-58-3-12/27

TITLE: The Influence of the Case of the Apparatus on the Characteristics of Thermo-bimetallic Elements (Vliyaniye obolochki apparata na kharakteristiki termobimetallicheskih elementov)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Elektromekhanika i avtomatika, 1958, Nr 3, pp 111-118 (USSR)

ABSTRACT: The investigations mentioned in publications which were carried out with respect to determining the temperature field and the characteristics of bimetallic elements were mostly carried out without taking the case or container surrounding the elements into account. Exact calculation is complicated, and the problem is here simplified by means of experimentally determined coefficients. The following assumptions are made in this connection: 1) The case containing the element is uniformly heated, it is a homogeneous body, its thermal conductivity and heat capacity are considered to be independent of temperature. 2) Between the case and the bimetallic element there is a relative temperature difference owing to the large difference between their thermal capacities. The differential equation of thermal equi-

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SOV/161-58-3-12/27

The Influence of the Case of the Apparatus on the Characteristics of Thermo-bimetallic Elements

librium is then written down. (1) and a solution is sought. An analysis of calculations shows that if the time constant of the case is greater than that of the element, the amount of overheating the case at the beginning of the process is not considerable, but that it may increase considerably after some time. This result is shown by a diagram (Fig 1). Next, the case is dealt with in which a time constant of the case is considerably greater than that of the bimetallic element. Finally, the ampere-second characteristic is investigated, a formula is written down, and a comparison between the formula developed and experimental measurements is made (Fig 2). The error amounts to 10%. In the appendix the experimental determination of the characteristic numbers is dealt with in detail on the basis of a model (scale 1:1); by means of the characteristic numbers determined a calculation is carried out by way of an example, and the various quantities are explained in detail (Fig 3). There are 3 figures and 5 Soviet references.

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SOV/161-58-3-12/27

The Influence of the Case of the Apparatus on the Characteristics of Thermo-bimetallic Elements

This article was recommended for publication by the
Institut avtomatiki i telemekhaniki AN SSSR (Institute for
Automation and Telemechanics of the AS USSR)

ASSOCIATION: Institut avtomatiki i telemekhaniki AN SSSR (Institute for
Automation and Telemechanics of the AS USSR)

SUBMITTED: April 22, 1958

Card 3/3

RIPS, Yekov Abramovich, kand. tekhn. nauk

Method for increasing the operational stability of some automatic
control systems. Izv. vys. ucheb. zav.; elektromekh. 7 no. 10: 1241-
1247 '64. (MIRA 18-1)

RIPS, Ya.A., inzh.

Designing the bimetallic elements of thermal apparatus permitting
short overloads. Vest. elektroprom. 29 no. 8:50-54 Ag '58.

(Thermoelectricity)

(MIRA 11:8)

AUTHOR: Rips, Ya. A., Engineer (Moscow) SOV/105-58-7-11/32

TITLE: Calculation of the Heaters of Bimetallic Thermo-Elements of Thermo Instruments (Raschet podogrevateley termobimetallicheskikh elementov teplovykh apparatov)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp. 51-55 (USSR)

ABSTRACT: The author discusses a method of the calculation of the heaters of bimetallic thermo-elements, when the series of the apparatus with indirect or combined heating of the elements is produced on the basis of an already existing model with direct heating of the element. The unequal distribution of temperature on the length of the bimetallic thermo-element is taken into account. For this reason, the conception of effective temperature is introduced, which is proportional to the deflection and characterizes the temperature conditions on the element as a whole. It is assumed that the specific electric resistance of the element and of the heater, their specific heat, the ~~factors~~ of thermal conductivity, and the factors of heat emission taking account of all kinds of heat

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Calculation of the Heaters of Bimetallic Thermo-Elements of Thermo Instruments SOV/105-58-7-11/32 2

exchange, are independent of temperature. Equations for a combined mode of heating are derived. They show that in the case of series connection of the heater, the calculated resistance of the element is higher than the actual resistance and that in the case of parallel connection it is smaller. The factor β (which is constant for a given design and which takes account of the rate of power transmitted to the element by the heater) must be determined for the calculations. It can be determined analytically only with difficulty. Hence, it is determined experimentally at the model. The calculation is then carried out on the basis of the data obtained by tests with the model according to formula (2). The calculation of the heater is based on the given amount of the limiting response current of the apparatus I_{limit} and of the required effective overheating temperature of the selected element when responding (θ_{required}). The required value of the calculated resistance during stabilized operation is computed according to these data from formula (8). The resistance R_2 of the heater is determined from the equations (3), (4) and (5) with $\varphi(t) = 1$. The cross section q_2 of the heater

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Calculation of the Heaters of Bimetallic Thermo-Elements of Thermo Instruments SOV/105-58-7-11/30

is determined from the admissible superheating temperature ($t_{admissible}$) at the passage of the maximum possible overload current I_k up to the response of the apparatus. The uncoiled effective length of the heater wire is calculated from equation (10). In order to be able to calculate the effective overheating temperature of the element at any moment with indirect or combined direct heating, it is sufficient to insert into the formula for the temperature of the element with direct heating, instead of the real amount of resistance, that of the calculated resistance corresponding to this moment. - It results from formulae (3), (4) and (5) that the function $\beta \varphi(t)$ must be known. It is shown how this function can be determined. Formula (12) gives this function, whereas formulae (13) and (14) determine the current-versus-time characteristic of the apparatus with indirect heating of the bimetallic element, or with a combined heating of the same, respectively. These formulae show that the current-versus-time characteristics in the case of indirect and combined heating are higher than those of the apparatus with direct

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Calculation of the Heaters of Bimetallic Thermo-Elements of Thermo Instruments SOV/105-58-7-11/32

heating of the elements.

An error was found in the calculations of 10 to 15 % at most - which is absolutely admissible - during the experimental examination of the calculations carried out according to these formulae. - Concluding, an example is computed. There are 1 figure and 3 Soviet references.

SUBMITTED: October 4, 1957

1. Infrared detectors--Applications 2. Thermistors--Applications

Para 4/4

AUTHOR: Rips, Ya. A. (Engineer)

SOV/110-58-8-14/26

TITLE: The Design of Bi-metal Elements for Thermal Apparatus that permit Short-term Overloads (Raschet bi-metalliches-kikh elementov teplovykh apparatov, dopuskayushchikh kratkovremennuyu peregruzku)

PERIODICAL: Vestnik Elektromyshlennosti, 1958, Nr 8, pp 50-54 (USSR)

ABSTRACT: The design of bi-metal elements, which is normally not very difficult, becomes rather complicated when it is necessary to permit short-time overloads to occur after the rated thermal conditions have been established. This is required for instance in motor starters, and restricts the range of permissible adjustment. When bi-metal relays are operating under such conditions there is marked difficulty in regulating the apparatus. This difficulty is related to the dimensions of the bi-metal elements and the present article offers a method of determining the best dimensions. The main determinations and assumptions are then described, by considering a bi-metal element operating as a trigger. A definite value of operating current causes bending of the element and the permissible current range

SOV/110-58-8-14/26
The Design of Bi-metal Elements for Thermal Apparatus that permit
Short-term Overloads

may be established according to the interval of trigger action and the position at which the element can be installed (see Fig 1). This interval directly characterises the difficulty of regulation. As the temperature is not uniform over the length of the element, the concept of effective temperature is introduced, and a formula is given for it. Simplifying assumptions that are made in calculating the difficulty of regulation and the best dimensions of the element are explained. Formulae are then derived for the difficulty of regulation, the breadth and thickness of the element, and finally its length is

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SOV/110-58-8-14/26
The Design of Bi-metal Elements for Thermal Apparatus that permit
Short-term Overloads

determined. The calculations were verified experimentally and it is concluded that the procedure permits of rapid and sufficiently accurate determination of the best dimensions for bi-metal elements.

There are 3 figures and 1 Soviet reference.

SUBMITTED: January 9, 1957

1. Temperature sensitive elements (Bimetallic)--Design
2. Temperature sensitive elements--Properties
3. Heat exchangers--Control

Card 3/3

RIPS, Ya.A., inzh. (Moskva)

Choice of safety factors and calculation of electromagnetic
mechanisms having a given reliability. Elektrichestvo no.4:76-
81 Ap '61. (MIRA 14:8)
(Electric apparatus and appliances)
(Electromagnetism)

Alina, Ye. L., kum. tekh. nauk (Moskva); L.S.DUFU, V.V., inzh. (Moskva)

Study of the parameters of the correcting stages of control
systems with operative a.c. Elektrichestvo no.8:8-12 Ag '64.
(MIRA 17:11)

L 20766-65 EWT(d)/EWP(1) Po-4/Pq-4/Pg-4/Pk-4/P1-4 SSD/ASD(a)-5/AFMDC/
AFETR/AFTC(p)/RAEM(a)/RAEM(d)/ESD(dp)/IJP(c) BC

ACCESSION NR: AP5003795

S/0114/64/000/010/1241/1247

AUTHOR: Rips, Ya. A.

TITLE: Method for increasing the functional stability of certain types of automatic control systems

SOURCE: IVUZ. Elektromekhanika, no. 10, 1964, 1241-1247

TOPIC TAGS: automatic control system, voltage stabilizer, electric generator

Abstract: One of the features of complex automation is the extensive synthesis of typized control circuits in situations where serially produced regulators are used in controlling members which are of the same type but which have differing parameters. This poses the problem of finding a simple and technically method for achieving stability in such systems. The present article deals with this problem in connection with a system for the automatic control of DC generator voltage in the case where an astatic brush regulator is used. The author develops the basic equations of the system, determines the limits of stability and the stabilizing resistance, and derives additional equations which may be used to determine the direction in which parameters must be changed in order to secure greater stability.

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ACCESSION NR: AP5003795

This particular control system has already been put to practical use, apparently with uniformly good results. The author notes that the method may be used in connection with systems in which the measuring organ is an electromagnet. Orig. art. has 4 diagrams and 26 formulas.

ASSOCIATION: none

SUBMITTED: 26Jul62

ENCL: 00

SUB CODE: IE, EE

NO REF SOV: 003

OTHER: 000

JPRS

Card 2/2

3(8)

SOV/21-59-1-19/26

AUTHORS: Vitrik, S.P., Dolenko, G.N., and Ripun, M.B.

TITLE: On the Shashor Horizon of the Dolina Oil Field.
(O Sheshorskom gorizonte na ploshchadi Doliny)

PERIODICAL: Dopovidi Akademii nauk Ukrain's'koi RSR, 1959, Nr 1,
pp 72-75 (USSR)

ABSTRACT: The chemical and physical characteristics of the components of the Sheshor horizon, found by the authors for the first time in the Dolina Oil field (the Carpathians) are described. The horizon is 20-25 meters deep, and contains, from the top downward, black argillites, sandstones, marls and sandstones, dolomitized rocks, dolomites, and grey-green calceous argillites. The large quantity of ankerite and pyrite present in the rocks, show the intensive decomposition of organic matter, which was possible during the drying-up of the upper Eocene sea, and its succeeding quick

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SOV/21-59-1-19/26

On the Shashor Horizon of the Dolina Oil Field

fill-in at the end of the deposition of the Shashor horizon.

ASSOCIATION: Institut geologii poleznykh iskopayemykh AN UkrSSR
(Institute of the Geology of Mineral
Resources, AS UkrSSR)

PRESENTED: July 28, 1958, by V.B. Porfir'yev, Member of the AS
UkrSSR

Card 2/2

RIPUN, M.B.

Strontianite from Upper Jurassic limestones of Lvov Province.
Dop. AN URSR no.8:1092-1096 '63. (MIRA 16:10)

1. Institut geologii goryuchikh iskopayemykh AN UkrSSR.
Predstavleno akademikom AN UkrSSR V.B. Porfir'yevym [Porfir'iev, V.B.].
(Lvov Province--Strontianite)

RIPUN, M.B. [Rypun, M.B.]

Lithology of oil-bearing rocks in the cis-Carpathian region.
Pratsi Inst. geol. kor. kop. AN URSR 4:60-73 '61. (MIRA 16:7)

(Carpathian Mountain region--Petroleum geology)

TKACHUK, L.G.; KUDRIN, L.N.; RIPUN, M.B.

Volcanic tuffs of the Neogene in western regions of the Ukrainian
S.S.R. Vop.min.osad.obr. 5:126-141 ' 53. (MIRA 12:3)
(Ukraine--Volcanic ash, tuff, etc.)

RIPUN, M.B. [Rypun, M.B.]; TKACHUK, L.G. [Tkachuk, L.H.]

On some autogenous mineral formations in oil-bearing deposits
of the cis-Carpathian Region. Geol.zhur. 18 no.4:32-37 '58.
(MIRA 12:1)

(Carpathian Mountain region--Oil sands)

GOFSTEYN, I.D. [Hofshtein, I.D.]; RIPUN, M.B. [Rypun, M.B.]

Importance of the minerals of the heavy fraction in correlating
the oil-bearing formations of the Carpathians. Pratsi Inst.
geol. kor. kop. AN URSR 3:94-101 '61. (MIRA 16:7)

(Carpathian Mountains--Petroleum geology)
(Minerals)

VITRIK, S.P. [Vitryk, S.P.]; DOLENKO, G.N. [Dolanko, H.N.]; RIPUN, M.B.
[Rypun, M.B.]

Sheshorskiy horizon in the Dolina oil field. Dop. AN URSR no.1:72-75
' 59. (MIRA 12:3)

1. Institut geologii poleznykh iskopayemykh AN USSR. Predstavil
akademik AN USSR V.B. Porfir'yev [V.B. Porfie'iev].
(Dolina District--Geology, Stratigraphic)

RIPUN, M.B. [Ryapun, M B.]

Study of the core of oil- and gas-bearing rocks in the western regions of the Ukraine. Dop. AN URSR no.4:501-504 '65.

(MIRA 18:5)

1. Institut geologii i geokhimii goryuchikh iskopayemykh AN UkrSSR.

3(8)

SOV/20-125-2-42/64

AUTHORS: Gofshteyn, I. D., Ripun, M. B.

TITLE: On a Find of Vulcanogenic Rock in the Cretaceous Sediments of Podolia (O nakhodka vulkanogennoy porody v nelovykh otlozheniyakh Podolii)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 2, pp 306-308 (USSR)

ABSTRACT: So far no vulcanogenic rocks had been known in the Upper-Cretaceous stratum of the Volyno-Podol'skaya (Volhynia-Podolia) platform (southwestern part of the Russian platform). In a cross section of the Turonian sediments of the Podol'skoye Pridnestrov'ye (Podolian Dniester land) the authors have detected an interstratification of bentonite loam (village of Koropets). Such finds were made in the western Ukraine in the Miocene age (Ref 1). In Koropets, 3 interstratifications emerge amidst a mass of homogeneous white Turonian limestones. At the bottom - greenish-yellow bentonite loam (0.3 m), above - light-colored sandy limestone (0.35 m), and on top a Turonian limestone conglomerate bound together by sandy-carbonate cement (0.75 m). This conglomerate points to a local uplift of the sea bottom, which fact may indicate a conservation of the volcanic ash, precipitated in this area,

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SOV/20-125-2-42/64

On a Find of Vulkanogenic Rock in the Cretaceous Sediments of Podolia

from which the bentonite loam eventually developed. The loam is a soft, wax-like, non-carbonate rock. In water it swells and changes into a white jelly. Granulometrical analysis was carried out, and the mineralogical composition was studied. The fraction > 0.25 mm mainly consists of splinters of decomposed volcanic glass, bean-shaped particles of iron hydroxides, individual grains of green glauconite and dark brown tourmaline. In the fractions $0.25 - 0.1$ and $0.1 - 0.01$ mm, tabular grains of a high-temperature plagioclase (sanidine) play the preponderant role, besides: quartz, ilmenite- and magnetite grains, grains of volcanic glass and of plagioclase (Nr 30). There are scattered grains of: zircon, acmite, biotite, tourmaline, rutile, chlorite, zoisite, garnet, dolomite, and microcline. Below, there may be a separating-out of (a) volcanogenic, (b) clastic, and (c) authigenic minerals. An analogous mineral complex (with the exception of sanidine) is characteristic of the Miocene tuffs of Predkarpats'ye (Carpathian foothills) (Ref 2). Some of the above-mentioned minerals are dealt with in greater detail. To them must be added: biotite and montmorillonite. On the basis of the investigations conducted, the volcanic rock concerned can be determined as bentonite loam. The content of volcanic glass of high SiO_2 content (72%),

Card 2/3

SOV/20-125-2-42/54

On a Find of Vulcanogenic Rock in the Cretaceous Sediments of Podolia

and noticeable sanidine quantities indicate the development from ashes of acid composition. Montmorillonite was formed as a consequence of the decomposition of the ashes in a slightly alkaline medium. This is also proved by the occurrence of authigenic glauconite. There are 1 figure, 1 table and 7 Soviet references.

ASSOCIATION: Institut geologii poleznykh iskopayemykh Akademii nauk SSSR
(Institute of Geology of Mineral Resources of the Academy of Sciences, USSR)

PRESENTED: November 20, 1958, by N. M. Strakhov, Academician

SUBMITTED: February 17, 1958

Card 3/3

RIPUN, .B.; SANDLER, Ya.M.; VORONA, G.P.

Ferruginous oolites of Jurassic sediments in the western provinces
of the Ukrainian S.S.R. Lit. i pol. iskop. no.6:98-101 N-D '64.
(MIRA 18:3)

1. Institut geologii goryuchikh iskopayemykh AN UkrSSR, L'vov.

PORFIR'YEV, V.B. [Porfir'iev, V.B.], akademik; GRINEBERG, Y.V.
[Hrinberh, I.V.]; LADYZHENSKIY, M.R. [Ladyzhens'kyi, M.R.];
LINETSKIY, V.P. [Linets'kyi, V.P.]; GALABUTSKAYA, K.A.
[Halabuts'ka, K.A.]; TKACHUK, L.G. [Tkachuk, L.H.];
SVARICHEVSKIY, L.V. [Svarychevs'kyi, L.V.]; RIPUN, M.B.
[Rypun, M.B.]; GABINET, M.P. [Habinet, M.P.]; CHEKHOVICH,
N.Ya. [Chekhovych, N.IA.], red.; MATVIICHUK, O.O., tekhn.
red.

[Carpathian menillite shales] Menilitovi slantsi Karpat. Kyiv,
Vyd-vo Akad. nauk URSR, 1963. 204 p. (MIRA 16:6)

1. Akademiya nauk Ukr. SSR (for Porfir'yev). Institut geologii
goryuchikh iskopayemykh AN Ukr.SSR (for all except Chekhovich,
Matviichuk).

(Carpathian Mountains--Oil shales)

RIPUN, M.B.

Find of tridymite in tufaceous rocks of the southwestern
margin of the Podolian Platform. Min. sbor. no. 15:334-336
'61. (MIRA 15:6)

1. Institut geologii poleznykh iskopayemykh AN USSR, L'vov.
(Volyn'-Podolian Upland--Tridymite)

GOFSHTEYN, I.D.; RIPUN, M.B.

Syneresis of silica in the ancient alluvium of the Dniester.
Vop. min. osad. obr. 6:102-103 '61. (MIRA 15:6)
(Dniester River--Alluvium) (Silica)

SOV-21-56-9-21/28

AUTHORS: Vitrik, S.P., Dolenko, G.N. and Ripun, M.B.

TITLE: On the Greenish-Grey Argillites of the Lower Menilite Series of the Dolina Oil-Field (O zelenovato-serykh argillitakh nizhnemenilitovoy svity na ploshchadi Doliny)

PERIODICAL: Dopolvidi Akademii nauk Ukrain's'koi RSR, 1958, Nr 9, pp 996 - 998 (USSR)

ABSTRACT: During the past few years, much deep drilling has been carried out in the Dolina area in prospecting for oil-bearing paleogene deposits. Among the strata crossed by the prospecting wells there are 2 layers of greenish-grey argillites in the Lower menilite series. These argillites were already mentioned by V.A. Shakin and V.V. Glushko [Ref.1] as one of the rocks in the series. However, their importance is higher, as they can be used as marker beds in the menilite series for this area. According to electrocoring data, these layers are characterized by low resistance and low gamma-activity. In a lithological respect, these layers consist mainly of hydro-micaceous-argillaceous rocks (argillites) and siltstones. Argillites differ from other rocks of the lower menilite series by the low content of siliceous minerals, humous organic substances and by the high content of ferro-

Card 1/2

SOV-21-58-9-21/28

On the Greenish-Grey Argillites of the Lower Menilite Series of the Dolina
Oil-Field

dolomite and pyrite. These properties manifest themselves in the apparent, reduced electric resistance of the rocks. These two layers of greenish-grey argillites can be of value for structural schemes and for a correct choice of the direction of prospecting. There are 2 Soviet references.

ASSOCIATION: Institut geologii poleznykh iskopayemykh AN UkrSSR (Institute of Geology of Mineral Resources of the AS UkrSSR)

PRESENTED: By Member of the AS UkrSSR, V.B. Porfir'yev

SUBMITTED: March 24, 1958

NOTE: Russian title and Russian names of individuals and institutions appearing in this article have been used in the transliteration.

1. Geophysical prospecting--USSR 2. Petroleum--Geology

Card 2/2

VITRIK, S.P. [Vitryk, S.P.]; DOLENKO, G.N. [Dolenko, H.N.]; RIPUN, M.B.
[Rypun, M.B.]

Greenish-grey argillites in the lower Menilite series of the Dolina
field. Dop.AN URSR no.9:995-998 '58. (MIRA 11:11)

1. Institut geologii poleznykh iskopayemykh AN USSR. Predstavil aka-
demik AN USSR V.B.Porfir'yev [V.B.Porfir'iev].
(Dolina--Geology, Stratigraphic)

RIPUN, M.B. [Rypun, M.B.]

Authigenic barite from the Polyanitsa series in the cis-Carpathian
region. Geol.zhur. 18 no.3:91-92 '58. (MIRA 11:11)
(Carpathian Mountain region--Barite)

15-57-1-316
Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 1,
p 45 (USSR)

AUTHOR: Ripun, M. B.

TITLE: Mineralogy of Tortonian Tuffs in the Southeastern
Part of Predkarpat'ye (cis-Carpatia) (K mineralogii
tortonskikh tufov yugo-vostochnoy chasti Predkarpat'ya)

PERIODICAL: V kn: Vopr. mineralogii osadochn. obrazovaniy. Vol 2.
L'vov, L'vovsk. un-t, 1955, pp 204-208

ABSTRACT: Volcanic tuffs in the region of Chernovtsy near the
Rybnitsa River and the town of Kolomyia have been
investigated. These tuffs form layers in the rocks
of the lower and the upper Tortonian. The structure
of these tuffs is vitroclastic and their glass content
is 95 to 99. Quartz is the dominant mineral;
plagioclase (ranging in composition from oligoclase
to andesine), biotite (index of refraction 1.648 to

Card 1/2

15-57-1-316

Mineralogy of Tortonian Tuffs (Cont.)

1.6664) with an admixture of apatite, hypersthene, hornblende, staurolite, disthene, zirconium, glauconite and opal are the other components. Index of refraction of glass is 1.492 to 1.498. In the altered tuffs glass fragments are surrounded by fibrous clay minerals of the montmorillonite-baddelyite type. Data obtained from chemical analysis of these tuffs and the quantitative determinations allow us to classify them as acid rocks which have been impregnated with Al_2O_3 and which approximate dacites and liparites (Tr: Rhyolites).³ The author believes that these tuffs originated in the Carpatian Mountains.

Card 2/2

S. P. B.

RIPUN, M.B.

Mineralogy of Tortonian tuff from the southeastern part of the
Carpathian foothills. Vop.min.osad.obr. 2:204-208 '55.(MLRA 9:11)
(Carpathian Mountain region--Volcanic ash, tuff, etc.)

RIPUN, M.B.

Petrographic characteristics and conditions of formation of Tortonian
deposits along the right bank of the Prut River. Geol.shur. 16
no.1:41-48 '56. (MLRA 9:8)
(Prut Valley--Geology, Stratigraphic)

TKACHUK, L.G. [Tkachuk, L.H.]; GURZHIY, D.V. [Hurzhii, D.V.]; KOLTUN, V.I.;
RIPUN, M.B.

Progress in petrographic studies of western regions of the
Ukraine during the Soviet regime. Pratsi Inst. geol. kor.
kop. AN URSR 1:108-117 '59. (MIRA 14:6)
(Ukraine—Petrology)

RIPUN, M.B. [Rypun, M.B.]

New data on the petrography of the gypsum-anhydrite horizon in
the Carpathian piedmont fault. Geol.zhur. 21 no.5:76-82 '61.
(MIRA 14:10)

1. Institut geologii poleznykh iskopayemykh AN USSR.
(Carpathian Mountain region--Petrology)

TKACHUK, Luk'yan Grigor'yevich; GURZHIY, Dmitriy Vasil'yevich; RIPUN,
Mariya Borisovna; PORFIR'YEV, V.B., otvetstvennyy redaktor;
LISENBART, D.K., redaktor izdatel'stva; SIVACHENKO, Ye.K., tekhnicheskiiy redaktor

[Lithology of Miocene deposits of the Chernovitsy and Southeastern parts of Stanislav Province] Litologiya miotsenovykh otlozhenii Chernovitskoi i iugo-vostochnoi chasti Stanislavskoi oblasti. Kiev, Izd-vo Akademii nauk USSR, 1956. 128 p. (MLRA 9:7)

1. Chlen-korrespondent AN USSR (for Porfir'yev)
(Stanislav Province--Petrology)

RIPIYAKH, L.A., starshiy nauchmyy sotrudnik

Effect of blood fibrin on experimental regeneration of osseous tissue. Trudy Ukr. nauch.-issl. inst. ortop. i travm. no.15: 331-336 '59 (MIRA 16:12)

1. Iz Ukrainського nauchno-issledovatel'skogo instituta perelivaniya krovi i neotlozhnoy khirurgii (dir.- starshiy nauchmyy sotrudnik Yu.M.Orlenko).

RIPYAKH , L.A., kand.med.nauk, KIM, A.

Mass poisoning with solanine. Sov.med. 22 no.10:129-131 0 '58
(MIRA 11:11)

(SOLANINE, pois.
mass outbreak in Korea (Rus))

L 27066-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/T-2/EWP(k)/EWA(h)/ETC(m)-6 EM

ACC NR: AP6017404

SOURCE CODE: UR/0122/65/000/008/0014/0018

AUTHOR: Ripyanu, A. (Engineer)

ORG: none

TITLE: Investigation of the transition motions of a rotor as it passes through the critical number of revolutions

SOURCE: Vestnik mashinostroyeniya, no. 8, 1965, 14-18

TOPIC TAGS: mechanical engineering, flexure

ABSTRACT: A theoretical analysis is made of transition motions based on a shaft of circular cross section supported by two bearings. The rotor is an eccentric disc fastened to the center of this shaft. The plane of the disc is perpendicular to the geometric axis of the shaft, and the eccentricity is equal to the distance from the center of gravity of the disc to the axis of the shaft. It is assumed that there is no gyroscopic effect since the mass of the shaft is small compared to that of the disc. When the disc rotates at a constant rate far from the critical velocity, the plane of deflection for the shaft rotates at the same speed as the shaft itself, and the center of gravity of the disc lies always in the plane of deflection. At a constant number of

Card 1/2

UDC: 62-251.001.5

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ACC NR: AP6017404

revolutions close to the critical value, the plane of deflection of the shaft no longer rotates at a velocity equal to that of the shaft itself, which causes alternating flexures in various planes with respect to the initial plane of deflection, leading to a shift in the center of gravity of the disc. The author derives a formula for determining the change in angular velocity of the deflection plane of the shaft with respect to the constant critical angular velocity at which the shaft rotates. Orig. art. has: 7 figures and 33 formulas. [JPRS]

SUB CODE: 13, 20 / SUBM DATE: none

Card 2/2

RIPYANU, A., inzh.

Studying transient motions of a rotor during the passage
through critical speed. Vest.mashinostr. 45 no.8:14-18
Ag '65.

(MIRA 18:12)

VASIL'YEV, M.V.; GLAGOLEV, A.V.; LISOVSKIY, M.A.; PLINK, L.I.; RIRASEVICH, G.V.

Application of aerial methods to railroad surveying. Geog. sbor.
no. 7:31-52 '55.

(MIRA 9:1)

(Railroads--Surveying) (Aerial photogrammetry)

RIPS, S.M.

Thermodynamic investigation of the process of gasification of
liquid oxygen. Inzh.-fiz.zhur. no.2:41-46 F '60.

(MIRA 13:7)

(Liquid oxygen) (Gas producers)

RIS, Lesli [Rees, Leslie]

"Eastful" (conclusion). IUn. nat. no.12:18-21 D '61.

(MIRA 15:1)

(Duckbills)

RIS, V. F.

FA 24T25

USSR/Engineering
Compressors, Centrifugal
Turbines, Steam

Aug 1947

"Some Conclusions from the Works on Centrifugal Compressor Machinery," V. F. Ris, Laureate of the Stalin Prize, Candidate in Technical Sciences, Nevskiy Order of Labor of the Red Banner Plant imeni Lenin, 6 pp

"Kotloturbostroyeniye" No 4

The conclusion of a series of articles. It has several graphic illustrations and formulae, with discussion of the influence of the form of the section between inlet and outlet values through which steam passes in a turbine, the influence of the cooling installation, and some remarks on design. 24T25

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21

PRECEDENCE AND PRIORITY

Steepness of Performance Curves of Compressors. (In Russian.) V. F. Rys. *Kotloturbostroenie* (Boiler and Turbine Manufacture), May-June 1948, p. 15.

Analyzes the phenomena whereby the efficiency of multistage compressors undergoes marked decrease in comparison with that of the first stage. This is particularly true in the case of multistage high pressure axial and centrifugal compressors. The operating characteristics of combined axial-centrifugal compressors were investigated. Experimental data are graphed.

METALLURGICAL LITERATURE CLASSIFICATION

CLASS	NUMBER	DATE	REMARKS
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Technology

Centrifugal compressors, Leningrad, Mashgiz, 1951.

Monthly List of Russian Accessions, Library of Congress, December 1952. UNCLASSIFIED

15, i.F.

114-11-9/10

AUTHOR: Ris, V.F., Candidate of Technical Sciences.

TITLE: Compressors of the Neva Engineering Works imeni Lenin.
(Kompessornyye mashiny Nevskogo Mashinostroitel'nogo zavoda
imeni V.I. Lenina)

PERIODICAL: Energomashinostroyeniye, 1957, Vol.3, No.11, pp.38-45
(USSR)

ABSTRACT: The design and production of centrifugal compressors was commenced at the Neva Engineering Works in 1933 without foreign technical assistance. Before the war, the Works produced 22 different types of compressors and since the war, more than 100 types have been designed and 84 types produced. The most characteristic types of machine have outputs from 100 to 6 500 m³/min, compression ratio from 1.2 - 9, power consumption of 50 - 18 000 kW and speeds from 1 500 - 12 000 r.p.m., whilst individual machines run at 22 000 r.p.m. Six types of machine are driven by steam turbines of 4 000 - 18 000 kW, but the majority are driven by electric motors, the most powerful of which is 12 000 kW. Twenty current types of machine with powers up to 8 300 kW are driven through gearing which steps up the speed to more than 3 000 r.p.m. Compressors have been made for a wide range of industrial gases. Compressors produced by the Neva
Card 1/6 Works are in service in the metallurgical, chemical oil and coal

Compressors of the Neva Engineering Works imeni Lenin. 114-11-9/10

industries, on gas pipe lines and elsewhere. A large number of machines have been exported. The total output of compressors produced in 1956 was about 490 000 m³/min and the total driving power was about 410 MW.

Investigations that have been made on the flow part of compressors are described. Technical progress is directed towards developing machines of maximum efficiency over a sufficiently wide range of operating conditions without excessive expenditure, and also to achieving reduction in size, weight and cost of machines and improvements in manufacture. The most important aspect is undoubtedly development of the flow parts. At the present time, the runners and guide vanes cannot be designed on the basis of pure theory and so experimental methods of investigation are particularly important. Therefore, the works' laboratories have done a great deal of work on the theory of similarity and on the use of models. However, it is in any case necessary to make tests on the full scale equipment and, accordingly, large test beds have been built on which in recent years 65 new types of machine have been tested.

Card 2/6 Theroetical considerations are then given about a number of dimensionless magnitudes used in the design of compressors. The most important of these is the ratio of the width of the outlet duct to the radius of the wheel. Runners are classed as being

114-11-9/10

Compressors of the Neva Engineering Works imeni Lenin.

of the pump or compressor type. The difference is illustrated in Fig.1. The relative merits of the two types are compared. The comparison is of great practical importance and shows that the tendency to use the pump type of runner has been very productive. The influence of the density of gas pumped on the optimum design is illustrated by the data in Table 2.

A number of recommendations are based on experience of tests on models and full-scale machines. These relate to such aspects of design as producing swirl in the inlet air and the design of inlet chambers. Many firms use too many blades and a formula is given for determining the number of blades. Recommendations are made about the inlet angle and diffusers.

The coolers of Neva Works compressors are usually of the tubular type. At the present time, many foreign firms, when designing a 7 - 9 stage compressor, cool the air after each stage except the first and last. However, much of the advantage gained from the cooling is thrown away because of the increased losses of pressure in passing the air from the runner to the coolers and back. The Neva Works, when using 7 - 9 stage compression, uses only two intermediate coolers and arranges the compressor stages in three separate sections forming, as it were, three independent and 3/6 machines joined together by two coolers.

Compressors of the Neva Engineering Works imeni Lenin. 114-11-9/10

The efficiency of compressors has been much improved in recent years and is now of the order of 80 - 86%. For example, four types of compressor used on blast furnaces and for similar work require from 360 - 1 300 kW less power than did the corresponding machines of pre-war design. As more efficient designs have been produced, the works have progressively withdrawn older models from production.

A great deal has been done to reduce the weight of the machines; it is advantageous to drive small and medium output compressors at very high speeds and, since the war, the factory has commenced to manufacture gearing with powers of 50 - 8 300 kW to step up the speed. By this means, it has been possible greatly to reduce the weight. Little data is available by which to compare machines produced by the Neva Works with foreign machines, but it would appear that compressors for 7.5 - 8 atm., type K-350-61-1, with an output of 370 m³/min and K-1500-61-1 with an output of 1 560 m³/min, together with their air coolers and reduction gears, weigh 20 and 75 tons, respectively whilst, comparable foreign compressors weigh 35 and 120 tons.

Card4/6 It is important that compressors should be reliable. The most vulnerable parts are the rotors and gearing. In practice, the gearing has been very reliable. The rotors are reliable, too,

Compressors of the Neva Engineering Works imeni Lenin. 114-11-9/10

but systematic study of stresses on runners by means of strain gauges have shown that actual stresses are considerably higher than the values calculated by simple methods. In some places, the stresses approach the yield point. Therefore, the works uses high tensile materials of high yield for high peripheral speeds. Several types of compressor are described. Compressor, type K-3250-41-1 (see Fig.5), intended for use on a blast furnace has an output of 3 250 m³/min at a pressure of 3.8 atm. It is driven by a 12 000 kW turbine running at 2 500 - 3 500 r.p.m. The compressor has one intermediate air cooler. Compressor, type K-350-61-1 has an output of 370 m³/min at a pressure of 7.5 atm. and a speed of 8 600 r.p.m. This compressor has six stages and consists of three sections each of two stages with two coolers. Compressor K-480-41-1 is intended for compressing nitrous gas. It has an output of 480 m³/min at a pressure of 3.5 atm. It is provided with a recuperation turbine which returns to the compressor shaft 45% of the power used in compression. Nitrous gas is very corrosive and corrosion-resistant steels were used in the manufacture of the compressor. The largest compressor on which the factory is now working is illustrated in Fig.6. It is type K5500-41-1, for use with a blast furnace. It has an output of 5 500 m³/min, at a pressure of 4.5 atm. The compressor will

Card 5/6 of

RIS, V.F.; Prinsipali uchastiye; DEN, G.N., kand. tekhn. nauk;
SHERSHNEVA, A.N., inzh.; STRAKHOVICH, K.I., doktor
tekhn. nauk, prof., retsenzent

[Centrifugal compressor machines] TSentrobezhnye kompres-
sornye mashiny. 2. perer. izd. Moskva, Mashinostroenie,
1964. 334 p. (MIRA 18:3)

RIS, V.F., kandi. tekhn. nauk, SHIFOKOV, N.A., inzh.

Effect of the thickness of the blade apparatus on the characteristics of multistage axial compressors. Izv. vys. ucheb. zav.; energ. 7 no.10:96-101 O '64.

(MIRA 17:12)

1. Nevskiy mashinostroitel'nyy zavod imeni V.I. Lenina i Leningradskiy tekhnologicheskiiy institut kholcdil'noy promyshlennosti. Predstavlena kafedroy glubokogo okhlazhdeniya.

ACC NR: AP6031395

SOURCE CODE: UR/0114/66/000/009/0002/0006

AUTHORS: Ris, V. F. (Doctor of technical sciences); Den, G. N. (Candidate of technical sciences); Shershneva, A. N. (Candidate of technical sciences); Tilevich, I. A. (Engineer)

ORG: none

TITLE: Some work of the Nevskiy Machine Building Works in studying the flow part of centrifugal compressor machines

SOURCE: Energomashinostroyeniye, no. 9, 1966, 2-6

TOPIC TAGS: centrifugal compressor, multistage compressor, exhaust diffuser, gas dynamics, compressor rotor

ABSTRACT: The results from studies of the flow parts of centrifugal compressor machines are given. The effect of intake chambers at various periods of time were studied. Tests of a final stage with a pump-type rotor with a short bladeless diffuser and a symmetric pear-shaped helix made in the presence of an intake chamber and with axial intake gave practically identical results (see Fig. 1). The effect of certain rotor parameters is studied on the basis of an earlier work of V. F. Ris (Tsentrobeznyye kompressornyye mashiny. Izd. Mashinostroyeniye, 1964). It is found that when the exit angle β_2 is increased from 15 to 90° the efficiency of the final

Card 1/3

UDC: 621.515.001.5

ACC NR: AP6031395

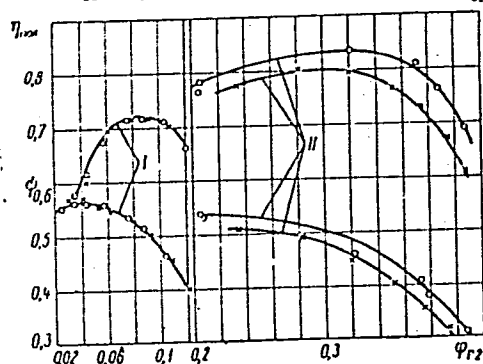


Fig. 1. Effect of intake chamber on characteristics of various stages:
I and II - $\beta_2 = 20$ and 45° :
O - stage with axial intake;
X - stage with intake chamber

stage increases at first, and then decreases. When the relative width of the rotor b_2/D_2 is reduced to 0.0131, the maximum values of efficiency are reduced by only 1% (see Fig. 2). The effect of bladed-diffuser geometry is also studied.

Card 2/3

ACC NR: AP0031395

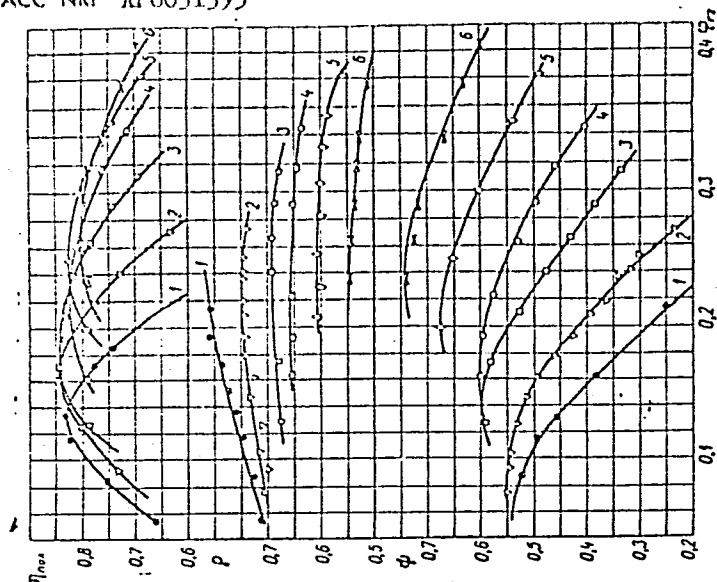


Fig. 2. Effect of exit angle β_2 for identical fixed elements of flow part of stage and $b_2/D_2 = 0.05$: 1 - 15° ; 2 - 22.5° ; 3 - 32° ; 4 - 45° ; 5 - 63° ; 6 - 90°

Orig. art. has: 11 graphs, 2 tables, and 4 formulas.

SUB CODE: 13/

SUBM DATE: none/

ORIG REF: 002/

OTH REF: 001

Card 3/3

ACC NR: AP6031399 SOURCE CODE: UR/0114/66/000/009/0022/0025

AUTHOR: Ris, V. F. (Doctor of technical sciences)

ORG: none

TITLE: Losses and the design of a centrifugal compressor stage

SOURCE: Energomashinostroyeniye, no. 9, 1966, 22-25

TOPIC TAGS: centrifugal compressor, ~~centrifugal compressor design,~~
~~compressor losses, vane diffuser, vaneless diffuser~~ COMPRESSOR STAGE

ABSTRACT: An attempt was made to generalize the available experimental data on energy losses in centrifugal compressors. Losses in impellers and in vane and vaneless diffusers are analyzed. The obtained loss coefficients as a function of various parameters are shown in Figs. 1 to 4. The following recommendations are given with respect to the calculation of compressor elements: 1) The cone angle θ of the equivalent conic diffuser formed by the blades should not exceed 10° ; this can be achieved by the proper selection of the number of impeller blades. 2) In a vane diffuser, the required angle θ can be obtained by varying the vane density $1/t$ in the range of 1.7—2.4. 3) The selection of a type of diffuser for maximal stage efficiency depends on the type of a stage (i.e., intermediate or end) and concrete values of β_2 , b_2/D_2 , and

Card 1/5

UDC: 621.515.532.55.001.2

ACC NR: AP6031399

ζ_{r2} . The obtained data is considered to be approximate, and further experimentation is needed. Orig. art. has: 4 figures and 16 formulas.

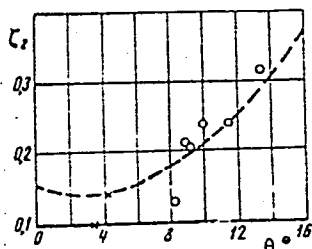


Fig. 1. Loss coefficient ζ_2 as a function of cone angle θ : o - for impellers with $\beta_2 = 90^\circ$; x - for impellers with $\beta_2 = 45^\circ$.

(Where: ζ_2 - refers to losses in impeller flow passages; θ is the cone angle of the equivalent conic diffuser formed by the blades; and β_2 is the flow exit angle.)

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ACC NR: AP6031399

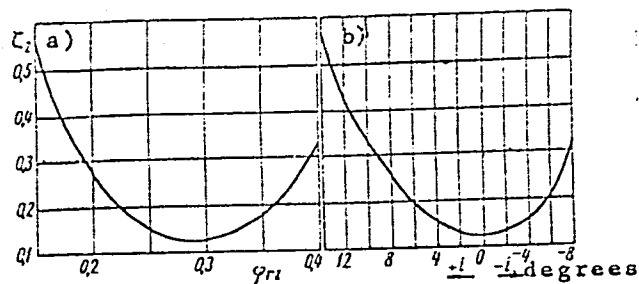


Fig. 2. Loss coefficient ζ_2 : a) as a function of φ_{r2} and b) as a function of angle of attack $i = \beta_1 - \beta'_1$. $\beta_2 = 45^\circ$; $b_2/D_2 = 0.063$.

(Where b_2 = blade width; D_2 = impeller diameter; β_1 = flow inlet angle; β'_1 = flow angle before inlet; φ_{r2} = discharge coefficient)

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ACC NR: AP6031399

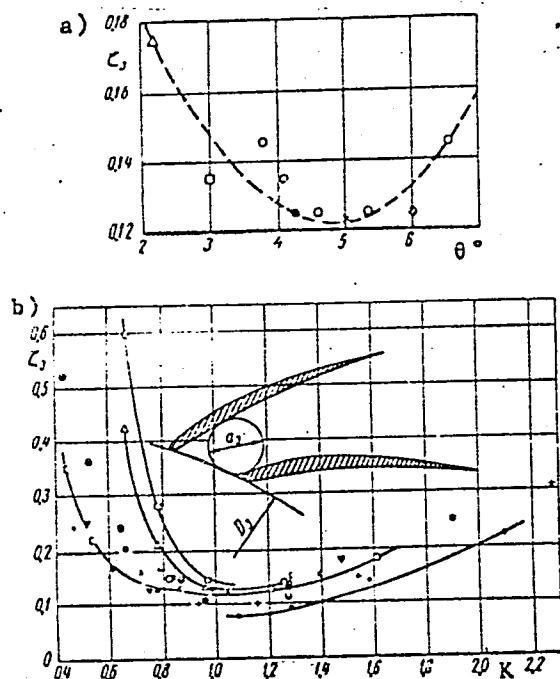


Fig. 3. Loss coefficient ζ_3 for vane diffuser: a) as a function of θ ; and b) as a function of diffusivity K

Card 4/5

ACC NR: AP6031399

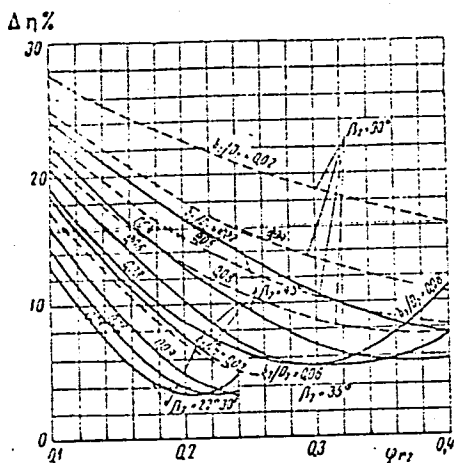


Fig. 4. Efficiency loss in vaneless diffuser as a function of ϕ_{r2}

[WA-76]

SUB CODE: 2// SUBM DATE: none/ ORIG REF: 006

Card 5/5

BULANIN, V.I.; GUR'YEV, V.P. [deceased]; RIS, V.F.

Konstantin Ivanovich Strakhovich, 1904-; on the occasion of his
60th birthday. Trudy LPI no.237:82-87 '64.

(MIRA 18:4)

L 19454-65 EWT(m)/EWP(k)/EWP(w)/EWP(v) Pf-L AEDC(a)/ASD(s) EM

ACCESSION NR: AP4049460

S/0143/64/000/010/0096/0101

AUTHOR: Ris, V. F. (Candidate of technical sciences); Shirokov, N. A.
(Engineer) B

TITLE: Effect of the density of blading on the characteristics of multistage axial compressors 26

SOURCE: IVUZ. Energetika, no. 10, 1964, 96-101

TOPIC TAGS: compressor, axial compressor, axial compressor characteristic

ABSTRACT: The effect of the density of blading of trimmed stages upon the gas-dynamic characteristics of compressors used in GT-700-4 power plants was experimentally investigated. The compressor had originally been designed for $G = 40$ kg/sec, a compression ratio of $\epsilon = 5.0$, $n = 3,000$ rpm; peripheral trimming, 0.20--0.36; hub-tip ratio, 0.545; number of stages, 17. As the rated performance could not be achieved, the number of impeller blades was reduced

Card 1/2

L 19454-65
ACCESSION NR: AP4049460

from 42 to 38 in the first stages and from 66 to 58 in subsequent stages. After this thinning, the pressure increased by 0.1 kg/cm² and the efficiency by 1.5%, with the compressor operating at rated conditions; at greater deliveries, the gains were still higher. In another gas-turbine power plant (GT-700-4M), a thinning of the blading in some stages resulted in 2.5-3% higher efficiency for the entire compressor, or 4% for the stage where the thinning was actually done. The effect of thinning was also verified on a low-pressure compressor of a GT-700-12M power plant. "Additional work on GT-700-4 compressors^C was done with the participation of the TsKTI Laboratory Chief, A. P. Goflin." Orig. art. has: 4 figures. 6

ASSOCIATION: Nevskiy mashinostroitel'nyy zavod (Neva Machine-Building Plant)
Leningradskiy tekhnologicheskii institut kholodil'noy promyshlennosti (Leningrad Technological Institute of Refrigeration Industry)

SUBMITTED: 15Nov63

ENCL: 00

SUB CODE: PR

NO REF SOV: 001

OTHER: 000

Card 2/2

RIS, V.I., kand.tekhn.nauk; PON, G.N., kand.tekhn.nauk

Choice of the optimum design parameters of the runner of a
centrifugal compressor. Energomashino stroenie 10 no.1:1-6
Ja '64. (MIRA 17:4)

1
ACCESSION NR: AP4014407

S/0114/64/000/001/0001/0006

AUTHOR: Ris, V. F. (Candidate of technical sciences); Den, G. N. (Candidate of technical sciences)

TITLE: Selecting optimum parameters for compressor impeller

SOURCE: Energomashinostroyeniye, no. 1, 1964, 1-6

TOPIC TAGS: compressor, compressor type machine, compressor impeller, impeller, impeller blade, blade shape, blade profile, blade outlet angle, blade inlet angle, compressor efficiency

ABSTRACT: Some results of an experimental investigation as to how to enhance the efficiency of centrifugal compressor machines are reported. The following factors were explored: (1) Number of blades in the impeller — a blade-row solidity of 2.5-3.8 was found to be optimum; (2) Blade inlet angle — optimum angle was found to depend on the compressor model; (3) Ratio D_o/D_2 within

Card 1/2

ACCESSION NR: AP4014407

0.47-0.59 with the hub-tip ratio of 0.15-0.25; (4) Acceleration of the inlet flow — a serious effect on the efficiency was found; (5) Thinning the blade trailing edge enhanced the efficiency by 2% in one experiment; (6) Blade cross-sectional shape in the radial plane; (7) Blade profiles in the radial plane; (8) Radius of rounding of the inlet section of the cover disk; (9) Blade outlet angle was explored for a variety of conditions. Orig. art. has: 7 figures, 5 formulas, and 5 tables.

ASSOCIATION: Nevskiy mashinostroitel'nyy zavod (Neva Machine-Building Plant)

SUBMITTED: 00

DATE ACQ: 14Feb64

ENCL: 00

SUB CODE: PR, AP

NO REF SOV: 006

OTHER: 000

Card 2/2

RIS, V. F., kand. tekhn. nauk

Features of the theoretical determination of the efficiency
and characteristics of centrifugal compressor machinery.
Energomashinostroenie 8 no.12:21-26 D '62.

(MIRA 16:1)

(Compressors)

S/114/63/000/004/001/005
A004/A127

AUTHORS: Ris, V.F., Den, G.N., Candidates of Technical Sciences,
Shershneva, A.N., Engineer

TITLE: The effect of flow on the runner of the centrifugal stage

PERIODICAL: Energomashinostroyeniye, no. 4, 1963, 14 - 17

TEXT: The authors analyze a force system which is applied to the runner of single-stage centrifugal force pumps with a shell located immediately behind the runner. They point out that such a layout of the shell results inevitably in a disturbance of the axial symmetry of flow, which can be confirmed by a simple qualitative analysis of the flow in the shell. Calculating the stress acting on the runner in the absence of an axial symmetry of flow round the wheel and the pressure changes near the runner along the periphery and radius, the authors present appropriate formulae and experimental data characterizing the aerodynamic stress acting on the runner. There are 6 figures and 1 table.

Card 1/1

RIS, V.F., kand.tekhn.nauk

Features of the theoretical determination of the efficiency
and characteristics of centrifugal-type compressor machinery.
Energomashinostroenie 8 no.10:26-29 0 '62. (MIRA 15:11)
(Compressors)

11625
S/114/62/000/010/001/003
E194/E484

16-7700
AUTHOR: Ris, V.F., Candidate of Technical Sciences

TITLE: The possibility of theoretical calculation of the efficiency and characteristics of centrifugal compressors

PERIODICAL: Energomashinostroyeniye, no.10, 1962, 26-29

TEXT: The present state of the problem of calculating the theoretical head, the loss resulting from leakage through the runner glands and disc friction losses are reviewed. A revised method of calculating power characteristics is proposed and it is assessed in the light of a great number of tests carried out at the Nevskiy mashinostroitel'nyy zavod im. Lenina (Neva Machinery Works imeni Lenin) on single and two-stage machines and models. In the majority of cases the difference between theory and practice does not exceed + 5%. The procedure for calculating stage losses and frictional losses proposed by the various authors is then reviewed and it is shown that the procedure is inconsistent and the results often widely different from the experimental data. The formulae used to calculate the impact
Card 1/2

The possibility of theoretical ...

S/114/62/000/010/001/003
E194/E484

loss are not confirmed experimentally, in particular the formulae of Stodola and K. Pfleyderer can give an error of up to 10% in head determination which is, of course, unsatisfactory. Methods of calculating the efficiency which are based on the flow of an ideal incompressible fluid in annular ducts, although they simplify the calculation, are not free from defects and do not allow for important design factors. There are 5 figures.

X

Card 2/2

RIS, V.F., kand.tekhn.nauk

Problems in the design and development of centrifugal compressing
machines. Energomashinostroenie 7 no.10:10-13 0 '61.
(MIRA 14:10)

(Compressors--Design and construction)

STRAKHOVICH, K.I., PROF.: FRENKEL', M.I., kand. tekhn. nauk; KONDRYAKOV, I.K., kand. tekhn. nauk; RIS, V.F., kand. tekhn. nauk. Primal uchastiye NOVOTEL'NOV, V.N., assistant; RUMYANTSEV, V.A., spets. red.; NIKOLAYEVA, N.G., red.; EL'KINA, E.M., tekhn. red.

[Compressors] Kompessornye mashiny. By K.I.Strakhovich i dr. Moskva, Gos.izd-vo torg.lit-ry, 1961. 600 p. (MIRA 15:1)

1. Kafedra glubokogo okhlazhdeniya Leningradskogo tekhnologicheskogo instituta kholodil'noy promyshlennosti (for Novotel'nov).
(Compressors)

28941

S/114/61/000/010/001/005

E194/E155

26.2120

AUTHOR: Ris, V.F., Candidate of Technical Sciences

TITLE: Problems in the design and development of centrifugal-type compressors

PERIODICAL: Energomashinostroyeniye, no.10, 1961, 10-13

TEXT: The principal trends in compressor design are to raise efficiency and to reduce size and weight without impairing the reliability or excessively increasing the cost. Design experience indicates the primary importance of correct selection of the type, dimensions and operating conditions of the runner. Runners may be classified into the following three types:

- 1) with blades strongly bent back ($\beta_2 = 15 - 25^\circ$, $z_2 = 6 - 10^\circ$), termed pump-type blades;
- 2) with normally bent back blades ($\beta_2 = 40 - 50^\circ$, $z_2 = 14 - 20^\circ$), termed compressor-type;
- 3) with radial blades ($\beta_2 = 90^\circ$, $z_2 = 16 - 28^\circ$), termed aviation type.

These three types of blades differ considerably in properties.

Card 1/6

28941

S/114/61/000/010/001/005

E194/E155

Problems in the design and

Most of the notation used in this article is assumed to be standard and known but the meaning of certain of the symbols is shown in Fig.1 which is a diagram of a runner and a velocity triangle. When fundamental equations are applied to the three main types, one finds that for given values of flow Q , head h_{eff} and b_2/D_2 (breadth to diameter), a typical runner of the compressor type has the highest running-speed coefficient and a runner of the pump type has the least. For given peripheral velocities the rate of flow in the runner and diffuser in a pump-type stage is considerably less than in a compressor-type stage. Therefore, the efficiency of a pump-type stage is apparently capable of improvement. The efficiency of a stage with compressor-type runners is higher than that for one with aviation-type runners. The influence of the ratio of breadth to diameter is considered, and also the influence of gas density, which affects the speed of sound in the gas. On the basis of the analysis the following conclusions are drawn about design principles:

- 1) In most cases the efficiency of the first stage suffers if runners of small relative width b_2/D_2 below 0.02-0.04 are used,

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